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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,001	11/14/2001	Michael L. Bell	1840-045	4728
47626 7590 05/29/2007 BECKMAN COULTER INC. C/O SHELDON MAK ROSE & ANDERSON 100 East Corson Street Third Floor PASADENA, CA 91103-3842			EXAMINER HAQ, SHAFIQUL	
			ART UNIT 1641	PAPER NUMBER
			MAIL DATE 05/29/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/991,001	Applicant(s) BELL ET AL.	
	Examiner Shafiqul Haq	Art Unit 1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-11 and 13-36 is/are pending in the application.
- 4a) Of the above claim(s) 2-6, 8-11 and 13-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7 and 29-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/12/07 has been entered.

Response to Election/Restriction

2. Restriction/election requirement were made FINAL in office action of 6/14/05 and the reason for election and restriction were also described. Applicants' requested to consider non-elected species of claim 22 and dependent claims thereon (claims 2-5) as additional species in the event the elected species is found allowable. Applicants' argument is persuasive and therefore, in the event claim 7 (consisting of elected species of ion-sensor, metabolite-sensor and antigen-antibody sensor) is allowable, claims 9, 11, 22 and dependent claims 2-5 and 23 with enzyme-sensor or nucleotide sensor or both as additional species would be considered.

Status of Claims

3. Applicants' responses and amendments filed on March 12, 2007 is acknowledged and entered.
4. Claims 2-11 and 13-36 are pending. Claims 2-6, 8-11 and 13-28 are withdrawn from further consideration as being as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Art Unit: 1641

5. Claim 7 and new claims 29-36 are examined on merits.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7 and 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDevitt et al (US 6,680,206 B1) in view of Engh et al (US 5,747,349).

McDevitt et al. disclose plurality of sensitive particles (sensor particles) for identification of multiple analytes in a sample (see title and abstract and column 4, lines 35-49 and claims 2-3). The particles may include various receptor molecules such as DNA (nucleic acid sensor), enzymes (enzyme sensors), antigens and antibodies (antigen-antibody sensor) to bind analyte of interest (column 5, lines 35-49; column 15, lines 63-67 and column 16, lines 1-12; column 20, lines 31-35, 54-57 and claims 20, 27-33) and to create a modulated signals (e.g. fluorescence) (column 15, lines column 18, lines 22-24, 66-67; column 19, lines 1-31 and claims 25, 26 and 36). The reagent also comprises ion sensor particles (e.g. for detection of pH, alkaline earth metal ions such as Ca^{+2}) (column 17, lines 31-45; examples 1, 2 and claims 22-23) and metabolite sensor particles (e.g. for detection of saccharides) (column 6, lines 14-19 and claim 24) that interact with specific ions or metabolite to

emit detected signals (e.g. fluorescence) (column 19, lines 9-31; column 24, lines 23-26, lines 56-61 and column 26, lines 17-23).

McDevitt et al. disclose plurality of sensitive particles arranged in an array format but fail to disclose different classes of sensor particles as mixture in a fluid.

Van den Engh et al. disclose mixture of reagents in a fluid comprising different reporter beads (sensor particles: e.g. ion sensor particles, metabolite sensor particles) for assaying multiple analytes in a sample (see abstract). Van den Engh et al. disclose that ion sensor particles interact specifically with analyte selected from group consisting of alkali metal ions (column 3, line 8) and metabolite sensor particles interact specifically with analyte selected from group consisting of saccharide such as glucose (column 3, lines 10-11). The reference further disclose antigen-antibody coated fluorescent beads (antigen-antibody sensor particles) in the background (column 1, lines 50-67) and disclose that beads tagged with different reporter molecules (sensor particles) can be mixed with one sample and plurality of analytes can be measured simultaneously (column 2, lines 40-42). Van der Engh further disclose sensor particle useful for use in a flow cytometer (see summary of invention).

Van den Engh et al. also disclose several advantages of using mixture of different reporter beads in a fluid. One advantage is that the measurement does not require incubation, washing, or filtration steps; reporter beads can be mixed with a fluid sample and the fluorescence measured without further processing. Other

advantage is that beads tagged with different reporter molecules can be mixed within one sample and a plurality of analytes can be measured simultaneously.

Therefore, given the above advantage of using mixture of reporter beads in a fluid for detection of multiple analytes, it would have been obvious at the time of the invention to a person of ordinary skill in the art to use plurality of sensor particles of McDevitt et al. in a mixture format as taught by Van den Engh to detect multiple analytes in a sample efficiently with less manipulation, with a reasonable expectation of success because Van den Engh et al. teach common reaction environment for analyzing multiple analytes in a mixture.

Response to Argument

8. Applicant's arguments and amendments filed March 12, 2007 have been fully considered, but they are not persuasive to overcome the rejection under 35 USC 103(a) as described in paragraph 6 of last office action (paragraph 7 of this office action).

Applicants must realize that one cannot show nonobviousness by attacking references individually wherein the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merk & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). 35 U.S.C. §103 rejection is based on obviousness, not on anticipation and obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of

ordinary skill in the art. See *In re Fines*, 837 F.2d 1071, 5USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir.1992). In this case, McDevitt et al. disclose plurality of sensitive particles (sensor particles) for identification of multiple analytes in a sample in an array format and Van den Engh et al. disclose plurality of sensitive particles (sensor particles) for identification of multiple analytes in a mixture format and disclose several advantages of using mixture of different reporter beads (i.e. plurality of sensor particles) in a fluid for analysis of multiple analytes in a sample. Since both McDevitt and Van den Engh are concerned with the same problem i.e. analysis of multiple analytes using plurality of sensitive particles (sensor particles) and Van den Engh discloses several advantages for carrying out analysis in a fluid mixture, one of ordinary skill in the art would be motivated to modify McDevitt with the teaching of Van den Engh.

Applicants argued that McDevitt et al. discourage the inclusion of antibody or antigen sensors in multi-analyte application due to problems with sensitivity, speed and/or versatility. This argument is not found convincing because Applicants cited paragraph from background section wherein McDevitt et al. describe some problems with prior antibody methods for detection that need further improvement. This background discussion cannot be interpreted that McDevitt discourage the inclusion of antibody or antigen sensor. McDevitt et al. describes the following in column 4 (lines 10-18):

"It is therefore desirable that new sensors capable of discriminating different analytes, toxins and bacteria be developed for medical/clinical diagnostic, environmental, health and safety, remote sensing, military, food/beverage, and chemical processing applications. It is further desired

Art Unit: 1641

that the sensing system be adaptable to the simultaneous detection of a variety of analytes to improve throughput during various chemical and biological analytical procedures.”

McDevitt further describes the following in lines 43-47 of column 5:

“The receptor molecules may be naturally occurring or synthetic receptors formed by rational design or combinatorial method. Some examples of natural receptors include, but not limited to, DNS, RNA, proteins, enzymes, oligopeptides, **antigens and antibodies.**”

Therefore, Applicants assertion that McDevitt et al. discourage the inclusion of antibody or antigen sensors is not persuasive.

Applicants further argued that Van den Engh reference teaches away inclusion of antigen or antibody reporter beads and thus there is not motivation to combine Van der Engh's reference with McDevitt's reference. This argument is not convincing because Van der Engh statement that “reporter beads of the invention are not required to have an immunoreactant” (such as a ligan, antiligand, antigen or antibody) do not necessarily mean that antigen or antibody sensor cannot be used with ion and metabolite sensor. This statement do not teach away using antigen and antibody sensor because Van der Engh et al. nowhere mention that antibody or antigen sensor cannot be used together with ion and metabolite sensor. Van der Engh's statement that “the interaction need not be a ligand/antiligand or antigen/antibody reaction” (column 4) cannot be interpreted that antigen or antibody sensor cannot be used in combination with ion sensor and metabolite sensor. Van der Engh is mainly concerned with ion sensor and metabolite sensor and thus antibody or antigen sensor is not needed but antigen or antibody sensors are discussed in lines 50-67 of column 1. Van der Engh also disclose using the sensor

mixture in flow cytometer. Therefore, Applicants argument the Van der Engh et al. teaches away using antigen or antibody sensor with metabolite and ion sensor is not persuasive.

Van den Engh et al. also disclose several advantages of using mixture of different reporter beads in a fluid. One advantage is that the measurement does not require incubation, washing, or filtration steps; reporter beads can be mixed with a fluid sample and the fluorescence measured without further processing. Other advantage is that beads tagged with different reporter molecules can be mixed within one sample and a plurality of analytes can be measured simultaneously. Therefore, given the above advantage of using mixture of reporter beads in a fluid for detection of multiple analytes, it would have been obvious at the time of the invention to a person of ordinary skill in the art to use plurality of sensor particles of McDevitt et al. in a mixture format as taught by Van den Engh to detect multiple analytes in a sample efficiently with less manipulation, with a reasonable expectation of success.

In response to argument about "a common reaction milieu", it is noted that the features upon which applicant relies (i.e., a common reaction milieu) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, a common reaction milieu has not been described in the specification as critical to the practice of the invention.

Art Unit: 1641


Conclusion

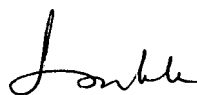
9. No claims are allowed.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shafiqul Haq whose telephone number is 571-272-6103. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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ART UNIT 1641


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